

REMARKS

The present Amendment is in response to the Office Action mailed August 23, 2004 in the above-identified application.

As an initial matter, Applicants acknowledge and appreciate the Examiner's willingness to conduct a telephone interview to discuss the present application on October 5, 2004. Applicants have reviewed and agree with the Interview Summary mailed October 12, 2004.

Applicants note the Examiner's indication that claims 5 and 20-23 contain allowable subject matter. Specifically, the Examiner indicated that claims 5 and 20-23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form to include all of the limitations of the base claim and any intervening claims.

In the Office Action, the Examiner rejected claims 1-4, 6-10, 12-19 and 24 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,111,225 to Ohkase et al. in view of U.S. Patent Publication No. 2002/0068870 to Noorbakhsh et al. and U.S. Patent No. 3,564,454 to Schrader. Referring to FIGS. 2 and 4 thereof, Ohkase discloses a processing chamber 4 having a gate valve G1. The processing chamber 4 includes a stationary, uniform-heating ring member 50 for radiating heat around a wafer W. The processing chamber 4 also includes a movable shutter 50A that fits within an opening in the uniform-heating ring member 50. The combination of the stationary, uniform-heating ring member 50 and the movable shutter 50A form a structure that surrounds a wafer. The shutter portion 50A is moveable between open and closed positions by shutter rod 52 that raises and lowers the shutter 50A.

Referring to FIG. 1 thereof, Noorbakhsh discloses a deposition chamber 100 including a liner 134 that receives a cooling fluid 121. The cooling fluid enables the liner 134 to be maintained at a predetermined temperature for discouraging deposition of films on the liner 134, as well as minimizing particulate generation due to stress cracking of deposited films.

The Examiner has cited Schrader as teaching the use of a wafer carrier (FIGS. 1 and 2) that supports substrates during a coating process. The wafer carrier is secured to a spindle for rotating the wafer carrier during the coating process to aid in uniform coating thickness and quality.

Applicants respectfully assert that claim 1 is unobvious because the cited references neither disclose nor suggest a reactor for growing epitaxial layers including "a cylindrical shutter located inside said reaction chamber for selectively closing said passthrough opening, . . . wherein said cylindrical shutter includes an internal cavity adapted to receive a cooling fluid, wherein said cylindrical shutter and said internal cavity of said cylindrical shutter completely surround said at least one of said wafer carriers secured within said reaction chamber." As noted above, Ohkase does not disclose a cylindrical shutter. In fact, Ohkase discloses a shutter that covers only a portion of an arc, with the remaining portion of the circle being completed by a uniform-heating ring member 50 that does not move (FIGS. 2 and 4). Moreover, the Ohkase shutter does not "completely surround" a wafer carrier as required by claim 1. In addition, the Ohkase shutter does have an "internal cavity adapted to receive a cooling fluid" as required by claim 1.

The deficiencies in Ohkase are not overcome by Noorbakhsh, which teaches a deposition chamber having a removable shield liner 134 (FIG. 1) that receives a cooling fluid 121, or by Schrader.

In addition, Applicants respectfully assert that Noorbakhsh is not a proper prior art reference because the invention claimed in the present application antedates the priority date of Noorbakhsh. In order to prove that the presently claimed invention predates Noorbakhsh, Applicants submit herewith Declarations pursuant to 37 C.F.R. § 1.131. In the Declarations, each of the inventors has declared a reduction to practice of the invention claimed in the present application before May 5, 1999. Thus, the invention claimed in the present

application was conceived and reduced to practice prior to the earliest priority date of Noorbakhsh, which is March 7, 2000.

For all of these reasons, Applicants respectfully assert that claim 1 is unobvious over the combination of Ohkase, Noorbakhsh and Schrader. Claims 2-4 and 6-9 are unobvious, inter alia, by virtue of their dependence from claim 1, which is unobvious for the reasons set forth above.

Independent claim 10 is unobvious for substantially the same reasons set forth above with respect to claim 1. Specifically, claim 10 is unobvious because the combination of Ohkase, Noorbakhsh and Schrader neither disclose nor suggest a reactor including "a cylindrical shutter located inside said reaction chamber for selectively closing said passthrough opening, said cylindrical shutter being movable between a first position for closing said passthrough opening and a second position for opening said passthrough opening, said cylindrical shutter being substantially hollow and including an internal cavity adapted to receive a cooling fluid, wherein said cylindrical shutter and said internal cavity of said cylindrical shutter completely surround said at least one of said wafer carriers secured within said reaction chamber." Independent claim 10 is also unobvious because the Noorbakhsh reference should not be considered as prior art, as noted above. For all of these reasons, Applicants respectfully assert that claim 10 is unobvious.

Claims 12-19 and 24 are unobvious, inter alia, by virtue of their dependence from claim 10, which is unobvious for the reasons set forth above.

As it is believed that all of the rejections set forth in the Office Action have been fully met, favorable reconsideration and allowance are earnestly solicited.

If, however, for any reason the Examiner does not believe that such action can be taken at this time, it is respectfully requested that she telephone Applicants' attorney at (908) 654-5000 in order to overcome any additional objections which he might have.

If there are any additional charges in connection with this requested Amendment, the Examiner is authorized to charge Deposit Account No. 12-1095 therefor.

Dated: October 19, 2004

Respectfully submitted,

By 

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